

DOCKET No. 079-146

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of :  
:   
Kesar SALEEM et al. :  
: Group Art Unit:  
Serial No. :  
: Examiner:  
Filed: :  
:   
For: MAGNETRON

**PRELIMINARY AMENDMENT**

Honorable Commissioner of Patents  
and Trademarks  
Washington, DC 20231

Sir:

Entry of the following amendment is requested in order to ensure applicants scope of protection to which they are entitled.

**IN THE CLAIMS**

3. (Amended) A magnetron as claimed in [any preceding claim] claim 1 wherein the coaxial line has at least one axially extensive slot through its outer conductor via which energy in the cylindrical waveguide mode is coupled from the coaxial line.

6. (Amended) A magnetron as claimed in [any preceding claim] claim 1 wherein said one oscillator mode is the mode and said another oscillator mode is the 1 mode.

7. (Amended) A magnetron as claimed in [any preceding claim] claim 1 wherein the coaxial waveguide mode is the TEM mode and the cylindrical waveguide mode is the TE<sub>11</sub> mode.



8. (Amended) A magnetron as claimed in [any preceding claim] claim 1 and including at least one axially extensive reflector slit in the output means for reflecting energy from said another oscillator mode back towards the resonant cavities.

10. (Amended) A magnetron as claimed in claim 8 [or 9] wherein a reflector slit is located in the surface of the outer conductor of the coaxial line.

11. (Amended) A magnetron as claimed in claim 8[, 9 or 10] wherein a reflector slit is located in the inner conductor of the coaxial line.

14. (Amended) A magnetron as claimed in [any preceding claim] claim 1 wherein the coaxial line is arranged to deliver energy to a waveguide.

16. (Amended) A magnetron as claimed in claim 14 [or 15] wherein the coaxial line includes a discontinuity which at least reduces transmission along the coaxial line of energy reflected from the waveguide back towards the anode in a cylindrical waveguide mode.

17. (Amended) A magnetron as claimed in [any preceding claim] claim 1 and including a second coaxial line arranged to receive energy in said another oscillator mode coupled in an axial direction from the end of the anode where the cathode lead is located and transmit it as a cylindrical waveguide mode.

22. (Amended) A magnetron as claimed in [any one of claims 17 to 21] claim 17 and including at least one axially extensive reflector slit in the second coaxial line for reflecting energy from said another oscillator mode back towards the resonant cavities.

23. (Amended) A magnetron as claimed in [any preceding claim] claim 1 wherein the anode has an axial length of greater than  $3\lambda/4$ .

24. (Amended) A magnetron as claimed in [any preceding claim] claim 1  
wherein the magnetron is an X-band linac magnetron.

Respectfully submitted,



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